

THE LA MOINE RIVER BASIN

AN INVENTORY OF THE REGION'S RESOURCES



ABOUT THIS REPORT

The La Moine River Basin: An Inventory of the Region's Resources is a product of the Critical Trends Assessment Program (CTAP) and the Ecosystems Program of the Illinois Department of Natural Resources (IDNR). Both are funded largely through Conservation 2000, a State of Illinois program to enhance nature protection and outdoor recreation by reversing the decline of the state's ecosystems.

Conservation 2000 grew out of recommendations from the 1994 CTAP report, *The Changing Illinois Environment*, the 1994 Illinois Conservation Congress, and the 1993 *Water Resources and Land Use Priorities Task Force Report*.

The Critical Trends report analyzed existing environmental, ecological, and economic data to establish baseline conditions from which future changes might be measured. The report concluded that:

- the emission and discharge of regulated pollutants over the past 20 years has declined in Illinois, in some cases dramatically;
- existing data suggest that the condition of natural systems in Illinois is rapidly declining as a result of fragmentation and continued stress;
- data designed to monitor compliance with environmental regulations or the status of individual species are not sufficient to assess ecological health statewide.

The Illinois Conservation Congress and the Water Resources and Land Use Priorities Task Force came to broadly similar conclusions. For example, the Conservation Congress concluded that better stewardship of the state's land and water resources could be achieved by managing them on an ecosystem basis. Traditional management and assessment practices focus primarily on the protection of relatively small tracts of land (usually under public ownership) and the cultivation of single species (usually game animals or rare and endangered plants and animals). However, ecosystems extend beyond the boundaries of the largest parks, nature preserves, and fish and wildlife areas. Unless landscapes are managed on this larger scale, it will prove impossible to preserve, protect, and perpetuate Illinois' richly diverse natural resource base.

Because more than 90% of the state's land area is privately owned, it is plainly impossible for Illinois governments to acquire resources on the ecosystem scale. Therefore, the Task Force and the Congress called for public agencies and private landowners to cooperate in a new approach to natural resource protection and enhancement. If landowners can protect, enhance, or restore precious natural resources through enlightened private management, the need for public acquisition can be reduced.

The Congress and the Task Force agreed that this new approach ought to be:

- organized on a regional scale;
- voluntary and based on incentives;
- guided by comprehensive and comprehensible ecosystem-based scientific information;
- initiated at the grassroots rather than in Springfield.

Finally, the Congress and the Task Force agreed that natural resource protection need not hamper local economic development but can enhance it through tourism and outdoor recreation.

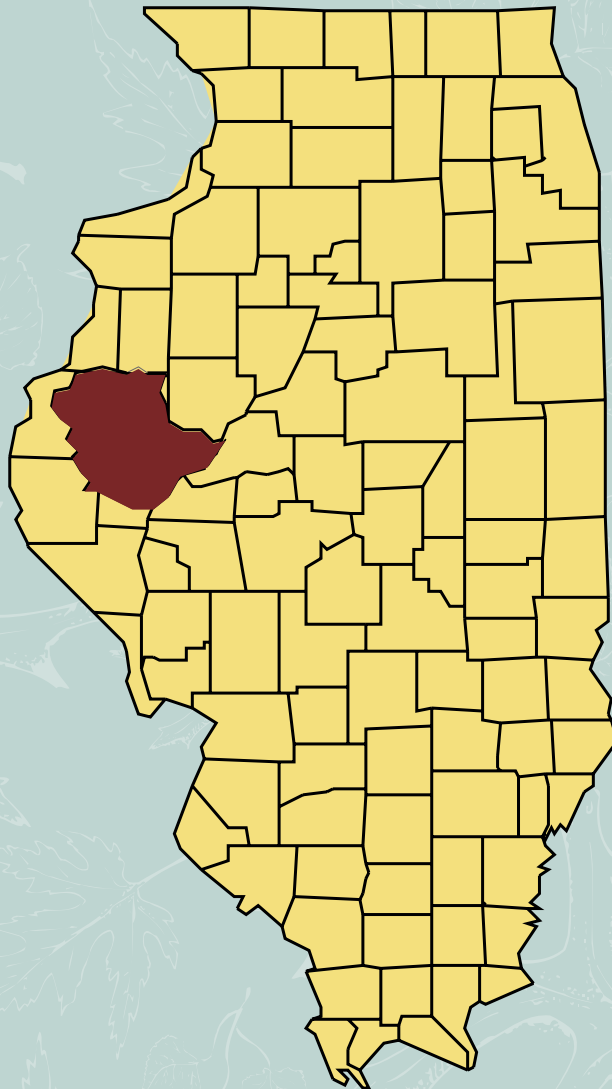
CTAP described the reality of ecosystem decline in Illinois, while the Congress and the Task Force laid out principles for new approaches to reversing that decline. Conservation 2000, designed to achieve that reversal, has implemented a number of their recommendations by funding several programs, one of which is IDNR's Ecosystems Program. The program redirects existing department activities to support new resource protection initiatives such as Ecosystems Partnerships. These partnerships are coalitions of local and regional interests seeking to maintain and enhance ecological and economic conditions in local landscapes. A typical Ecosystem Partnership project merges natural resource stewardship (usually within a given watershed) with compatible economic and recreational development.

(continued on inside back cover)

A Project of the Critical Trends Assessment Program

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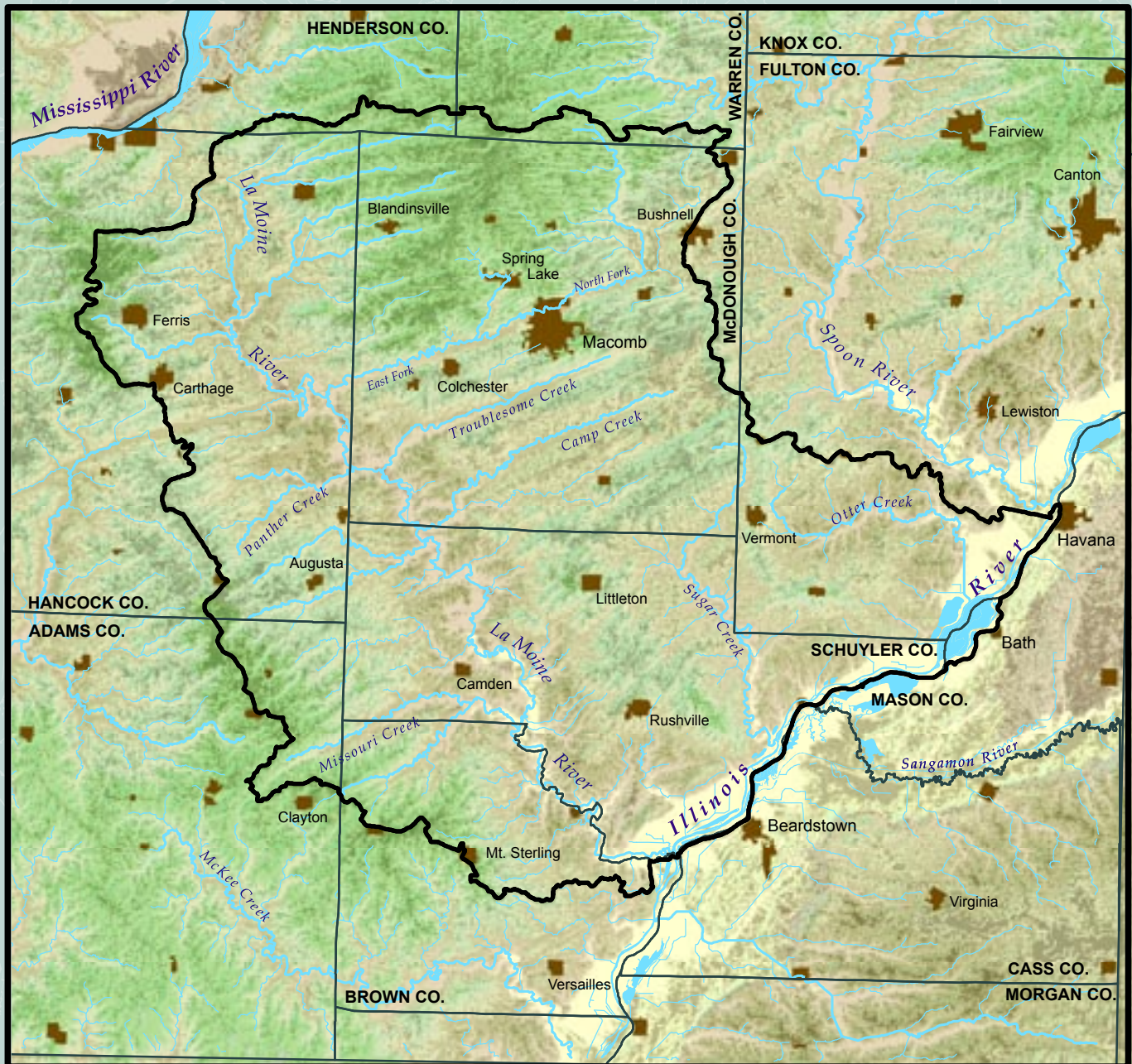
June 2005

Published by the Illinois Department of Natural Resources
Office of Realty and Environmental Planning

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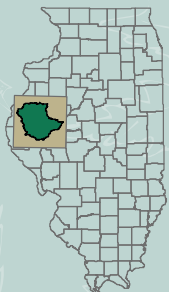
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Landforms in the La Moine River Basin

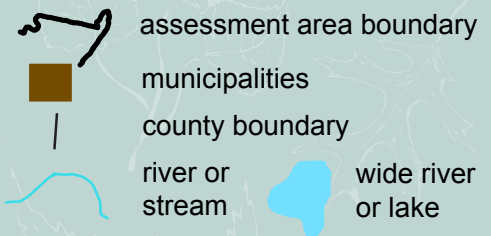
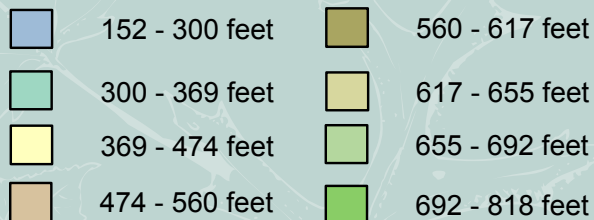


L.R. Smith • Illinois State Geological Survey

0 3.5 7 14 21 Miles



Elevation in feet above mean sea level





The La Moine River

Thomas Rice

THE LA MOINE RIVER BASIN

AN INVENTORY OF THE REGION'S RESOURCES

Today the La Moine River of west-central Illinois is a modest stream in an often-overlooked part of the state.

A succession of peoples going back more than 10,000 years, however, had regarded the river's basin as something like Eden. Indeed, early Euro-American settlers found its very richness a nuisance. An early traveler to Rushville expressed in print his gratitude for the determination of the area's still-living pioneer class to "clear the country of bears, deer, bees, etc."

Happily, the countryside along the La Moine basin was never quite cleared of wild things, in spite of the industrious efforts of its pioneers and their descendants. The river is the thread that connects an area of 1,758 square miles on the west side of the Illinois River between Havana and Beardstown, most of which lies within Brown, Hancock, McDonough, and Schuyler counties. For millennia the river and its tributar-

ies have been carving the uplands that overlook the broad Illinois floodplain; the result in this spot is a countryside of rolling fields interrupted by steep-walled wooded valleys as deep as 50 to 150 feet. No wonder an early traveler praised it as "one of the most inviting spots on the surface of the globe."

The La Moine is a major tributary to the Illinois. It rises in western Warren County and flows approximately 124 miles over a very irregular course that earned it its original name of Crooked Creek. A modest 41 feet wide on average, the La Moine's channel widens to around 100 feet through the middle portion of the river and as much as 250 feet near its confluence with the Illinois. Its floodplain varies in width accordingly, from 1,000 feet to nearly a mile at its terminus.

Life often looks larger looking backward, but even allowing for nostalgia in pioneer reminiscences, the richness of wildlife in presettlement

Illinois was extraordinary, as measured by both the diversity of species and the sheer numbers of living things. Locals complained that a person could hardly walk a hundred yards in the woods in the summer without encountering at least one rattlesnake. Historian John Hallwas, in *Western Illinois Heritage*, recalls an 1820s settler from the area who once complained that the snakes thereabouts were "so plentiful as to clog the plow."

Gray wolves were so numerous that they had to be hunted en masse. During a community wolf hunt in Macomb in 1838, people of adjoining counties carrying horns and drums and other noisemakers met and formed a circle many miles in diameter, driving all the wild game, including wolves, before them. "There were but few wolves killed," reported one account, because as the circle closed, the wolves hid in the long grass until they could break through the lines and escape.

The ecosystem that sustained such abundant life was typical of the central third of Illinois. Surveys by the Government Land Office from around 1820 suggest that tallgrass prairie covered about 49 percent of the La Moine basin. Prairie probably dominated the wide flat uplands between drainage valleys. Typical was the spot in La Moine Township, where Hancock, Schuyler, and McDonough counties meet, which settlers named Round Prairie.

That grasses thrived on the uplands instead of trees is explained by the fires that regularly swept across the landscape and killed the seedlings of most tree species. The forests of the La Moine basin generally were found instead on the east and north sides of streams, rivers, and wetlands where they were protected from wind-pushed fires that generally moved across the area from the west. According to surveyors, forest covered another 50 percent of the presettlement La Moine basin. Surveyors did not then separately list savannas, which are the open woods that grew on prairie across much of presettlement Illinois; such

mixed ecosystems were counted as prairie or as forest, depending on the density of the tree cover.

Land surveyors noted the presence of open water in the 1820s landscape, most of which was found on the flats bordering the Illinois River in the form of shallow backwater lakes or sloughs. Much of what modern ecologists classify as wet prairie and forested floodplains were then described as grasslands or woods. Scattered natural ponds also occupied depressions in (usually) marshes and wet prairies. The extent of these and other kinds of long-vanished wetlands must be inferred from the continued presence of soils unique to wetlands. Such estimates suggest that wetlands covered about 17 percent of the La Moine basin in presettlement days.

It is not known how many different species of plants grew within the La Moine basin at the time of European settlement. Scientists at Western Illinois



Michael R. Jeffords

White oaks were once widely cut for timber to make pork and whisky barrels.

University, with the help of such local amateur botanists as Alice Kibbe and R.M. Myers, have been diligently compiling plant species lists and community descriptions of the area in modern times. So far 1,127 plant species have been reported from within today's area, although about one in four is not native to Illinois. This is roughly two in five of the species known in Illinois—not an especially rich inventory.

THE INDUSTRY OF NATURE

From the start of the Euro-American era, industry in the La Moine basin was based on the extraction of its natural resources. Harvesting wild bee hives was one such industry in Schuyler County. Old-timers reported that it was possible to find 10 bee hives on a good day, the yield from each running as high as 30 to 40 gallons; in 1823, one local company shipped 27 barrels of strained honey to St. Louis, along with much wax. Rafting logs, staves, and hoop-poles were in demand in St.



Thomas Rice

Many picturesque barns built by early residents can be found throughout the area.



Michael R. Jeffords

Cast-off mussel shells showing holes left by a once thriving button industry.

Louis, and many a local tree was sent down the Illinois River as one or the other.

Virtually all processed food-stuffs—whiskey, flour, cured pork—was shipped or stored in barrels. Making them required many coopers and helpers. A veteran of the trade reported that from 1844 to 1852 some 1,500 men were thus employed in Schuyler County making barrels. White oak timber was used exclusively for pork and whisky barrels with red or black oak used in other barrel types—the forests along the La Moine supplied it all. In the days before plastics, buttons were made from bone or the shells of mussels. The button industry was first based

in towns along the Mississippi, but musseling shifted to the Illinois River after 1900 or so, when the Mississippi's beds were exhausted. Mussel beds on the Illinois River off Schuyler County were 8 to 10 feet deep, and "clamming" kept hundreds of people busy for years. Button-making peaked in the years just before World War I, after which demand sank in part because the Japanese began flooding the market with cheaper buttons.

Fulton County's Dr. W.S. Strode, an amateur naturalist, made the case for conservation at the time. "All our fresh water mussels are harmless," he wrote. "They are the scavengers of our water courses, and do much good in purifying the streams. They furnish much of the food of many fishes and waterfowls and should not be wantonly destroyed." Such arguments did not prevent the beds off Schuyler County being stripped of live animals faster than the animals could reproduce.

The topsoils of the La Moine basin are its crucial mineral resource, but the land hides other riches. Several seams of coal bend toward the surface here. One of Illinois' more productive coal seams is known as the Colchester Coal, named after the La Moine basin town in McDonough County where it was



Kevin Cummings

The small paper pondshell and the larger fragile pondshell mussels can still be found in area waters.

The Area at a Glance

Δ The La Moine River Assessment Area takes in nearly 1,800 square miles on the west side of the Illinois River between Havana and Beardstown, most of which lies within Brown, Hancock, McDonough, and Schuyler counties.

Δ A major tributary to the Illinois River, the La Moine River rises in western Warren County and flows approximately 124 miles over a very irregular course that earned it its original name of Crooked Creek.

Δ Surveys by the Government Land Office from around 1820 suggest that the land cover in the La Moine basin was about half prairie and half woods. Scientists estimate that some of each was wetlands of various types that covered about 17% of the basin.

Δ About 1,127 plant species have been reported from within the area, of which about one in four is not native to this part of Illinois. (Most of the latter are not even native to North America.) This is roughly two in five of the species known in Illinois—not an especially rich inventory.

Δ Of the nearly 1.2 million acres within the La Moine basin, roughly one acre out of every 132 still consists of presettlement-quality habitat—proportionately about one-tenth in Illinois as a whole.



Thomas Rice

Argyle Lake is a public recreation area and wildlife habitat created on converted coal mined land.

first identified. Exposed in many places by streams that had sliced through the soils that covered it, such coal could be mined using little more than a shovel and a bucket. Young Edward Scripps, the future press magnate whose name would become familiar as part of the Scripps-Howard newspaper chain, helped his father harvest coal from Willow Creek on the family's farm near Rushville; they kept themselves warm with some of it and sold the surplus in town.

These primitive digs were superseded by deep mines, which in turn were superseded by early strip mines when steam-powered machines were built able to efficiently remove 40–50 feet of overlying material. Coal towns sprang up around the mine heads—the rural version of the factory town. The export of coal required the import of experienced miners; much of Colchester's population in its heyday consisted of newly arrived British miners.

Local miners were kept busy for nearly 100 years beginning in the 1850s. More than 300 mines—strip and underground—are known to have operated in the area. (The actual

number is probably higher.) Coal mines in McDonough, Schuyler, and Brown counties alone produced nearly 255 million tons of coal from the beginning of mining in the area through 1996. There still is a lot of coal in the La Moine basin. In 1982, Freeman United

Coal Company's Industry Surface Mine southeast of Macomb began taking coal from the same Colchester seam that sustained the industry in years past. Most of it seems destined to stay in the ground, however. The Colchester Coal, the most widespread in the area, is less than three feet thick in most places, which means that the many tons of soil that must be removed to expose it yields relatively little product. Because it is laced with polluting sulfur, such coal has a limited market.

If coal mining has a limited future in the La Moine basin, its past remains very relevant to local life. In the days before old mine works had to be cleaned up, many of these “pre-law” sites posed threats to public health and safety in the form of cave-ins, erosion, and acid runoff. Where feasible, state of Illinois agencies have cleaned up such sites and converted them for public recreation and wildlife habitat; Argyle Lake State Park was created in 1949 on 1,500 acres of mined land north of Colchester.

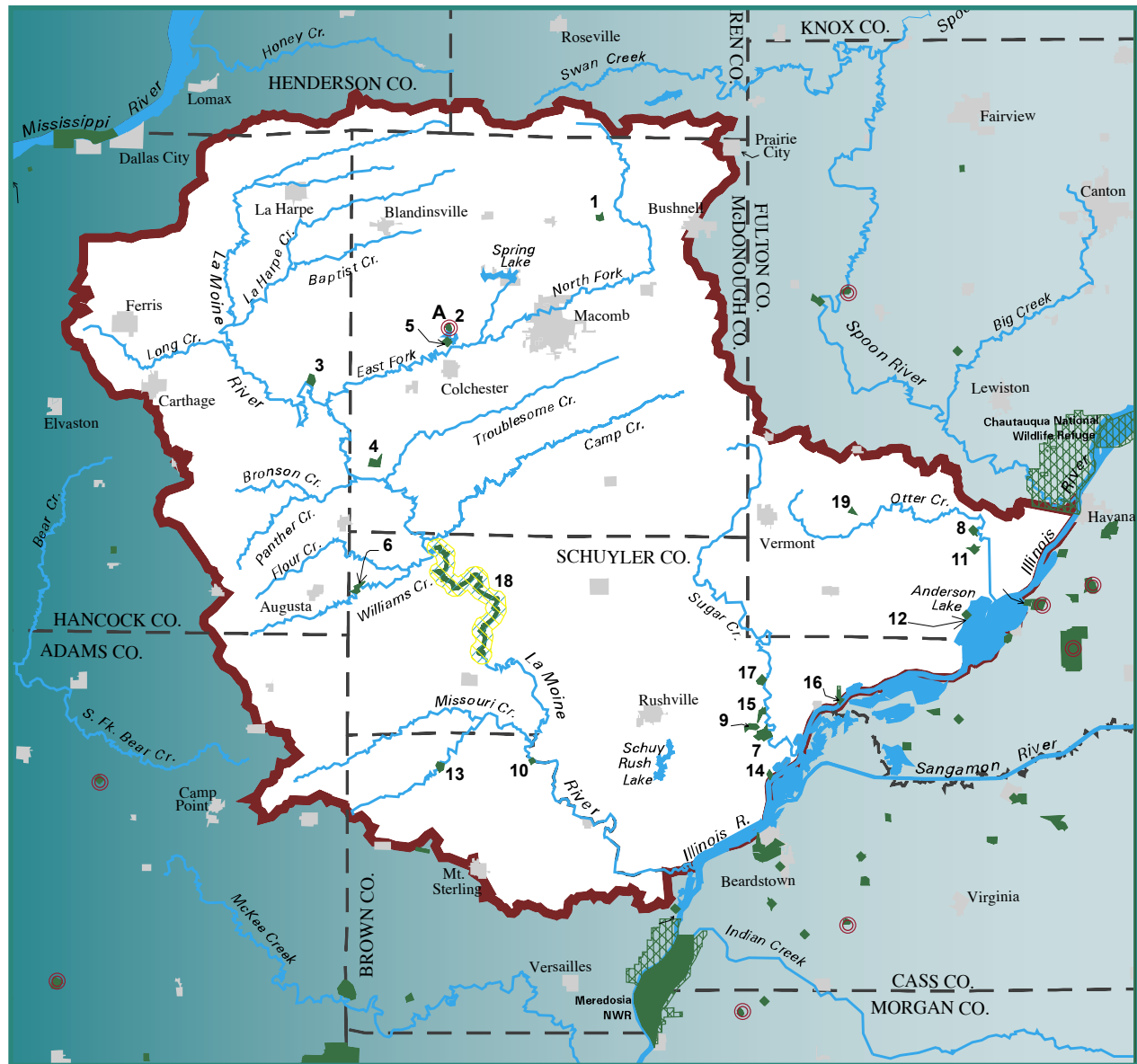
To the extent that row-crop production has costs in topsoil lost to ero-



Michael R. Jeffords

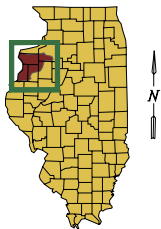
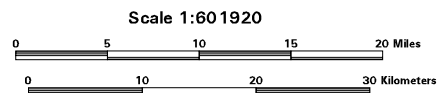
White-tailed deer have fared very well in the La Moine River basin.

THE LA MOINE RIVER BASIN



Nature preserves and natural areas boundaries from 1:24000 Heritage GIS database, July, 2000.
Significant stream data from Page, L. M. et. al., 1992.

- 148 Nature preserve
- 697 Natural area
- Biologically significant stream
- National wildlife refuge



Illinois Nature Preserves
A Argyle Hollow Barrens

Illinois Natural Areas Inventory Sites

- 1 Good Hope Marsh
- 2 Lake Argyle Barren
- 3 Cecil White Prairie
- 4 Gigsby Marsh
- 5 Sphagnum Seep
- 6 Weinberg-King Natural Area
- 7 Browning Woods
- 8 Enion Geological Area

- 9 Mill Creek Geological Area—B
- 10 Spencer Farm Geological Area
- 11 Seahorne Creek Geological Area
- 12 Anderson Lake Site
- 13 Little Missouri Creek Dells
- 14 Frederick Road Site
- 15 Sugar Creek Site
- 16 Sanganois Landing
- 17 Scab Hollow
- 18 La Moine River
- 19 Diers Seep Spring

Lots of Barns

Just as many artifacts of nature are disappearing from the western Illinois landscape, so too are artifacts of its human past. The barn aficionado—and there are many of them—will drive many a mile to see a true round or a cross-gabled barn up close. Parts of Illinois like the La Moine basin, with lots of farms, also will have lots of barns. The Kibbe Hancock Heritage Museum in Carthage offers information on no fewer than 321 historic barns in Hancock County. McDonough County's collection of barns is extensive enough that the Macomb Area Convention and Visitors Bureau has published a free brochure and map to guide tourists to 30 privately owned barns within 20 miles of town, all at least 80 years old.

Several area barns are distinguished enough in their historical or architectural merit to have earned listing on the National Register of Historic Places. Among them is Clarence Kleinkopf's round barn north of Colchester and the Welling-Everly horse barn on U.S. Route 136 near Adair.



Thomas Rice

The Clarence Kleinkopf round barn near Colchester is listed on the National Register of Historic Places.



Thomas Rice

A section of steep, rocky river bank along the La Moine River on the county line between Schuyler and Brown counties.

sion, one could say that farming can also be an extractive industry along with the mining of coal and clay. Near its headwaters in the flattish uplands of Hancock and McDonough counties, the La Moine's tributary streams have shallow slopes; the downstream reaches of Camp Creek, the East Fork, and La Harpe Creek typically drop only two to three feet per mile. The channels of the streams that enter the La Moine in its middle reaches, such as Missouri Creek, Cedar Creek, Flour Creek, and Otter Creek, are steeper—five to nine feet per mile. The tributaries of the lower La Moine, in Schuyler, Brown, and Adams counties and along the Illinois River bluffs, are the steepest of all. Some streams near the Illinois River bluffs drop more than 50 feet in every mile, which is as close to waterfalls as streams usually get in Illinois.

The steeper the slope the faster the flow, and the faster the flow the more energy water has to cut away at exposed soils. After a heavy rain or snow melt, therefore, it is not only water that comes roaring out of the bluffs. Soil does too, in the form of sediments. The

impact that heavy rain and snow melt have on erosion rates can be seen in the numbers collected at a sediment gaging station on the La Moine at Ripley in the 1980s and '90s. The concentrations of suspended particles in the water flowing past that gage varied from 5.2 milligrams per liter to a high of 7,948. The actual amount of sediments being carried in the water varied from 0.9 tons per day to 212,000 tons per day. On a yearly basis, the stream's burden of sediments ranged from a low of 362,000 tons in 1997 to a high of 1.78 million tons in 1981. (The annual average was 910,000 tons.)

Lakes—especially artificial lakes formed by damming up streams—act as sediment traps. The rate at which sediment piles up in the bottoms of lakes gives a good idea of soil losses in the watersheds that feed them. Sedimentation rates for five lakes surveyed in the La Moine basin, as measured by the loss of water storage volume, range from 0.6 percent per year for Argyle Lake to 2.6 percent per year for the original Spring Lake; the latter rate would render a body of water practi-

The Area at a Glance

△ More than 99% of local ecosystems have been altered. Most grasslands now consist of pastures, hay fields, idle fields, road and railroad rights-of-way. Much open-water habitat consists of excavated ponds, impoundments, sewage-treatment lagoons, and reservoirs. More than four of every five acres of wetlands have been drained or filled in.

△ Two acres of every 10,000 acres of today's forest, and 0.7 acres of every 10,000 acres of original forest, remain in top ecological condition. The area's one acre of undegraded prairie is about 1/10,000th of one percent of its original extent. Of the area's nearly 32,000 acres of wetland, about 23 acres are recognized as high-quality and undegraded—about one 1/10,000th of the original extent.

△ Forty-six mammal species are known or are thought likely to occur in the area, which is nearly 4 of every 5 of the 59 mammal species that currently occur in Illinois. Approximately 258 bird species regularly occur here, which is about 86% of the approximately 300 species that regularly occur in the state. Of these, less than half are known to have bred here, and of these, 20 have become locally extirpated or are rare during the breeding season—some of the lowest totals in the state.



Michael R. Jeffords

Painted turtles are abundant in the area.

cally useless as a water supply within a generation. The hills of the lower La Moine valley contain many potential reservoir sites capable of supplying all the area's water needs and then some. Most of them, however, are fed by watersheds that deliver so much sediment along with the water that they would eventually store as much mud as water.

To a farmer, erosion's cost is mainly economic. Crop fields suffer long-term reductions in soil productivity through gullyng (which means less of the field can be plowed) or topsoil losses. Local history also is a casualty of erosion. Native Americans camped along area streams for many thousands of years. In the past 175 years, the archeological evidence of their presence in many places is assumed to have been buried deep beneath alluvium washed into stream bottoms from fields upstream.

Erosion's ecological effects on streams downstream are more dire. Channel bottoms becomes covered with loose silt in which aquatic plants cannot take root. Nesting and feeding grounds needed by aquatic creatures are buried. Water-carrying capacity is decreased. Perhaps predictably, habitat scores are highest for local streams that

flow through the parts of the La Moine basin that are farmed the least, such as the sand and bedrock bluffs above the floodplain of the Illinois River. In spite of the steep terrain and easily eroded soils, survey data from 1999 showed that erosion in the La Moine basin is not, for the moment, catastrophic. Soil was being lost at high rates from only 3 percent of the farmland—a big improvement from the 1970s.

“NOT ENCOURAGING” TRENDS

The countryside along today's La Moine River is adorned with many fewer trees than it once was. All the histories from the late 19th century describe the clearing of local forests as a sign of progress, something to boast about. Until coal became easily available, the woods were the only readily available supply of fuel and building materials. Forest is still scattered on bottomland as well as on bluffs and ravines but trees today cover only about 20 percent of the surface.

Some animal species were hunted out of existence in the area—the gray wolf and the globally extinct Passenger

Pigeon are two well-known examples—but most extirpations (local extinctions) occurred when the habitats on which creatures depended disappeared. Several species of birds that are known to once have nested in the area—Carolina Parakeet (globally extinct), Peregrine Falcon, Greater Prairie Chicken, Phalarope, Black Tern, Bewick's Wren, and Bachman's Sparrow—no longer are found here.

Extirpations of local plant species have been surprisingly few. One loss was the state-endangered long beech fern that once grew on local moist sandstone cliffs. Another was the eastern white prairie fringed orchid, whose survival in the U.S. is officially considered threatened; the plant is found in high-quality prairie, of which virtually none exists in the La Moine basin. Two other species (American slough grass, and showy lady's slipper) are known to have occurred in the area but are presumed extirpated; the prairie spiderwort has not been seen in more than 10 years.



Michael R. Jeffords

Great Blue Herons can be seen hunting in the waters throughout the region.



Michael R. Jeffords

The spring peeper is one of 14 amphibian species in the La Moine basin, and can be heard calling from localized woodland pools.

Most of the habitats within the La Moine basin that have survived the agriculturalization of the area are not in top ecological condition. Of the area's 2,520 miles of streams, only a 14.3-mile stretch of the La Moine River (between Cedar and Flour creeks) has been designated by state scientists as biologically significant. While the change is apparent only to the trained eye, today's forest is composed of different mixes of tree species compared to 180 years ago. Scraps of actual prairie survived only in places where the land was too steep or otherwise inaccessible to farmers, such as within railroad rights-of-way.

Of the nearly 1.2 million acres within the La Moine basin, about 85 acres still harbor habitats that remain undegraded from presettlement days. That is roughly one acre out of every 132—proportion-

ately about 1/10 as much presettlement-quality habitat as survives in Illinois as a whole. Experts at the Illinois Natural History Survey describe these trends as "not encouraging," which in the careful language of science means "very bad."

Little local forest has survived in its presettlement state—about 39 acres. That acreage amounts to 0.02 percent of remaining forest and 0.007 percent of estimated original forest cover; put



Michael R. Jeffords

The virile crayfish is a common crustacean in area streams.

The Area at a Glance

△ Most habitats that survive are not in top ecological condition. Of the area's 2,520 miles of streams, only one 14-mile stretch of the La Moine River is considered by state scientists to be a significant biological resource.

△ Fourteen amphibian species and 24 reptile species are known or thought likely to occur here. Only 15 snake species remain—at least 5 others probably existed in recent times—and 9 of these show notable declines in numbers.

△ Area waters have historically supported a moderate diversity of aquatic species, including 60 species of fishes, 17 species of native mussels (all of them relatively common), and 12 species of malacostracans, or large crustaceans, including the virile crayfish.

△ Fragmentation of habitats is a problem. The area's 23 acres of high-quality wetlands are split among five sites; many grassland bird species need habitats at least 125 acres in area to nest successfully, but those are rare in the La Moine basin.

△ As of 2001, more than 3000 sites have been recorded in the area at which some archaeological evidence indicates human presence.

“From nature’s great book:” Anderson Lake

“There is a beautiful lake within the Bluff City limits covering an area of about 2,000 acres,” enthused a newspaper writer from the Rushville Times in 1883. “The lake, with the scenery surrounding the city, makes this a place of resort for the wealthy seeking pleasure, the sportsman seeking the duck and the literary seeking knowledge from this picturesque page of nature’s great book.”

The spot that inspired this bit of poetry is Anderson Lake, which survives today as a roughly 1,100-acre shallow floodplain lake on the Illinois River north of Browning. In the early half of the 1900s, Anderson Lake was a private shooting grounds for one of the many once-famous duck clubs that dotted the Illinois River valley. The club drained the lake each summer and planted millet and other grains favored by migrating waterfowl on it; come fall, the lake was flooded, with the mature grains providing food for migrating birds and attracting easy targets for hunters.

Old-timer Clyde Bell has recalled how the other creatures of the bottomland spared him the expense of building a blind. “There’d be a muskrat house every hundred feet, and up high. I’d stand behind them and shoot ducks, and never think of a blind. Lay my gun on top of a muskrat house and get on the leeward side because the ducks always come in against the wind. I shot many a duck on Anderson Lake from behind a muskrat house.”

Private hunting clubs gradually lost their appeal, and in 1947, the State of Illinois began acquiring the lake and adjacent land for public use. What is now known as the Anderson Lake State Fish and Wildlife Area encompasses 2,247 acres that includes a second, smaller lake nearby—Carlson Lake.

Anderson Lake remains an excellent place for duck hunting—mainly Mallard and Wood Duck. Those who prefer to look at birds rather than shoot at them flock to the place too; eagles winter here, and American White Pelicans stop during their spring migrations. Anglers find healthy populations of bass, bluegill, catfish, and crappie, and facilities are provided for boaters, campers, and picnickers. Such attractions have drawn more than 100,000 people per year to Anderson Lake since the late 1980s.



Anderson Lake is a shallow floodplain lake on the Illinois River near Browning, Illinois.

Thomas Rice



Thomas Rice

High quality habitats can be found at Weinburg-King State Park in Schuyler County.

another way, 2 acres of every 10,000 acres of today's forest, and 0.7 acres of every 10,000 acres of original forest, remain in top ecological condition. The losses of high-quality prairie are even more dramatic. The one acre of undegraded prairie identified within the area is about 0.0001—1/10,000th of 1 percent of its original extent. Of the area's nearly 32,000 acres of wetland, about 23 acres are recognized as high-quality and undegraded—about 1/1,000th of the original extent.

The ability of birds to breed is a test of ecological quality, and here the La Moine basin comes up short. Of the 258 bird species present in the area, less than half are known to have bred here, and of these, 20 have become locally extinct, or are rare during the breeding season. These totals are some of the lowest in the state, although more diligent field observations might reveal more breeding species.

While degraded in many ways, the habitats in the La Moine basin are still quite varied. Wetland types include floodplain forest, sedge meadows, ponds, seeps, and shrub swamps. Cliffs occur along the bluffs of the La

Moine River; high-quality sandstone cliff and eroding bluff communities are found at Weinburg-King State Park in Schuyler County, and the limestone cliff at Browning Woods in Schuyler County is recognized as an Illinois Natural Area.

The variety of habitats explains why the area sustains a relatively varied community of birds. Approximately 258 bird species regularly occur here, which is about 86 percent of the approximately 300 species that regularly occur in the state. Among them are many less common species such as Cooper's Hawk (found in virtually all large forested tracts and many small woodlots), the rare Broad-winged Hawk, Acadian Flycatcher (found on moist ravines), American Redstarts (in bottomland forest along the La Moine and Illinois rivers), and songbirds, including several species of warbler. The draining of so many wetlands has reduced the habitat for, and thus the breeding populations of water birds, but one can still find herons and ducks, Spotted Sandpiper (a common denizen of local strip-mine ponds and gravel pits), and Double-crested Cormorant

The Area at a Glance

△ The rare decurrent false aster is a tall perennial herb in the sunflower family that is original to, and has been identified in, 10 counties in and near the La Moine basin.

△ More than three-fourths of the land in the La Moine is considered agricultural, a slightly lower proportion than in Illinois as a whole.

△ The La Moine basin has been overwhelmingly agricultural since the mid-1800s. The amount of land in farms declined somewhat between 1978 and 1997—7.3%, which is about the same rate of loss as statewide. The number of farms in the region declined nearly by a third between 1978 and 1997 as existing farms were consolidated into ever-larger production units—a little steeper drop than in Illinois as a whole.

△ Nearly 80% of the local agricultural land is used to grow row crops like corn and soybeans; such crops cover nearly 60% of the local land area.

△ Since the early 1970s, the farm sector's share of employment in the La Moine basin has shrunk from 19% to 9% (local service jobs employed twice as many people) and by the late 1990s was providing only 7% of area's income.



Michael R. Jeffords

The northern water snake

(which summer along the Illinois River), among other species.

Because the mammal fauna of the La Moine basin has not been surveyed extensively, the exact numbers and range, indeed the presence, of many species must be guessed at. The upland bluffs near the Illinois River are likely homes for gray foxes and bobcats, and its grasslands possibly harbor the rare Franklin's ground squirrel. In all, 46 mammal species are known or are thought likely to occur in the area, which is nearly 4 of every 5 of the 59 mammal species that currently occur in Illinois.

There has not been a systematic survey of the amphibians and reptiles of the La Moine basin. Fourteen amphibian species and 24 reptile species are known or thought likely to occur here. Local woods are home to amphibians such as the spring peeper and two species of gray treefrog and reptile species such as the brown snake. In the local wetlands, common species include the green frog and southern leopard frog, the painted turtle and common garter snake; the bullfrog and cricket frog are typical of local lakes, ponds, and impoundments. The cricket frog, green frog, and northern water snake are typical of creeks and small rivers

in the La Moine basin, while the mudpuppy, the snapping turtle, and the spiny softshell turtle are typical inhabitants of the La Moine River. The amphibian tiger salamander and western chorus frog are found in prairie habitats, as are fox and plains garter snakes.

Area waters have historically

supported a moderate diversity of aquatic species, including 60 species of fishes, 17 species of native mussels (all of them relatively common), and 12 species of large crustaceans, including the virile crayfish.

Shrinking habitats means that the surviving populations of many spe-

cies are small, which leaves them more vulnerable to future environmental upsets. Among the plants, around 103 prairie species occur at such low population levels in Illinois that their survival in the state is officially considered endangered or threatened; 11 of these have been reported from within the La Moine basin. The vast majority of these "E&T" plant species known from the La Moine basin today survive mostly in Illinois Nature Preserves and other protected high-quality habitats. For example, two of the E & T species found within the La Moine basin, the savanna blazing star and buffalo clover, prefer savanna and savanna like habitat such as the six acres of barrens under protection at Argyle Lake State Park.

The rare decurrent false aster is a tall perennial herb in the sunflower family that is original to, and has been identified in, 10 counties in and near the La Moine basin. The original habitats for *Boltonia decurrens* included wet prairie, shallow marshes, open river and lakeshores in this part



Michael R. Jeffords

The green frog is a common resident in area ponds.



Michael R. Jeffords

The rare decurrent false aster can be found in 10 counties in and near the La Moine basin.

of the Illinois River valley and near the mouth of the Missouri River. Little such habitat remains, and much of what does has been compromised by siltation, herbicides, and altered flooding patterns. However, the plant is adapted to disturbed ground, supplied by humans in abundance, allowing it to spread in marshes along the Illinois River. Several new colonies of decurrent false aster have been discovered in recent years. (There are seven known in Schuyler County alone.) In spite of these new discoveries, however, the overall trend for the plant's population is down.

The local mammals include some rare species. The federally endangered Indiana bat was spotted at two locations in 1985—along Camp Creek in McDonough County and along Missouri Creek in Schuyler County. Several bobcat sightings have been reported in the past two decades.

River otters used to be present in the area—the name of Fulton County's Otter Creek attests to it; its numbers dwindled to so few that state scientists regarded its survival here and in the rest of Illinois as threatened, but the river otter has made such a vigorous comeback in some areas that it may be removed from the threatened list.

Amphibians and reptiles have

not fared well since settlement. Amphibian biodiversity remains fairly high, although the populations of many species have declined. Reptile species have suffered more. Five turtle species remain present in the area, but one and possibly two or more have been extirpated. One of two lizard species that probably dwelt in the area have become very rare.



Michael R. Jeffords

The feisty badger can still be found digging burrows in the region.

The Area at a Glance

△ For decades western Illinois, including the La Moine basin, has used its sloping land to pasture livestock. However, production of beef cattle and hogs has been declining as those industries shift to the use of what amounts to meat factories to produce animals.

△ In 1925 the dominant crops in the heart of the La Moine basin were corn (249,000 acres) and small grains such as oats, wheat, and barley (295,000 acres). By 1999, corn plantings were up to 323,000 acres, but small grains are disappearing, having decreased from 295,000 acres in 1925 to a record low of 53,000 acres in 1999. Instead of growing oats and hay for their draft animals, farmers grew soybeans for sale—319,000 acres worth in 1999.

△ The area is not much less rural today than it was in the mid-1800s. Satellite images from the 1990s showed that less than 2% of the land in the area was used for urban purposes—a mere 16,000 acres or so. In Illinois as a whole the figure was close to 6%.

△ Farming and manufacturing have declined as a relative share of the area economy, with jobs shifting to services (including government), wholesaling, and transportation.

Only 15 snake species remain—at least 5 others probably existed in recent times—and 9 of these show notable declines in numbers. Among the local reptiles are the state-threatened Kirtland's snake and timber rattlesnake. The timber rattler has been seen in the area, most recently in Woodland Township in Fulton County, but whether the animal still dwells in the rugged terrain of southern Fulton County and northern Schuyler County is not known. The Kirtland's snake occupies any of several wetland habitats, but it prefers wet prairies with heavy grass cover. Such habitat has been almost completely eliminated, and it is not certain that the snake still is in the area.

None of the 60 species of area fishes is considered threatened or endangered, nor are any of the 17 species of area mollusks. Ten specimens of the Illinois-endangered isopod *Caecidotea lesliei*—rare enough that it has no common name—were collected from a field tile near Colmar in McDonough County in 1941. The species has not been collected since then, and its status is unknown.

There are several reasons for a species being rare. Some species were rare to begin with, since the La Moine basin is at the fringes of their natural ranges; queen-of-the-prairie and yellow monkey flower are examples. Habitat destruction, primarily due to the conversion of the land for agricultural and urban uses, is an obvious source of stress on local plant and animal populations. So is the degradation of even those habitats that remain; this happens when forest is grazed by livestock, when marshes become silted up, or polluted by chemicals washes into them from adjacent land. Competition from non-native species, which often thrive in new settings that lack natural predators, can overwhelm native plants.

Human action has consequences for other life that are not always obvious. Rural farmyards have imported feral cats that decimate populations of

ground-nesting birds. Over the centuries, many plant species in Illinois adapted to periodic fires; indeed the life cycles of several of them depend on the changes in the habitat that occasional fires cause. Stopping fires saves property and farm fields, but results in new species mixes in grasslands and woods. Killing off wolves was good for local populations of white-tailed deer, but not for forests whose flora have been altered by the deer's relentless browsing. Engineered modifications such as channelization or dredging have destroyed some stream habitats, and the felling of trees along banks has exposed others to sunlight, raising water temperatures and leaving the banks themselves vulnerable to erosion.

Fragmentation is another problem. The area's 23 acres of high-quality wetlands, for example, are split among five sites; many grassland bird species need habitats at least 125 acres and preferably more than 250 acres in area to nest successfully, but those are rare if they exist at all in the La Moine basin. Forest birds suffer higher rates of nest predation (by raccoons) and brood parasitism (by Brown-headed Cowbirds) as woods become more fragmented; as a result, fragmented woods—smaller than 500 acres—have probably become population "sinks" in which local forest birds are unable to replace adults that die each year of natural causes.

The effects of these forces can be seen in the area's forests. Overgrazing by domestic livestock (which has declined) and browsing by white-tailed deer (which has increased substantially in recent years) have changed the kinds of plant species that make up today's forest; the species that survive grazing tend to be those that animals don't like to eat, such as thorn-bearing red haw and honey locust or exotic species such as Osage orange, multiflora rose, and garlic mustard that thrive on forest floors in the absence of the fires that would have killed them off in the past.



Michael R. Jeffords

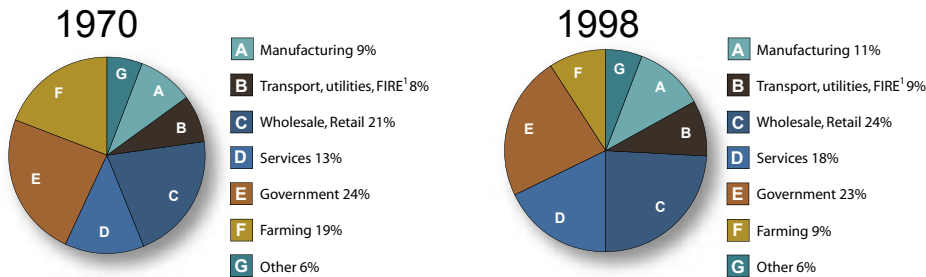
The La Moine River basin is on the edge of the natural range of the beautiful queen-of-the-prairie



Michael R. Jeffords

Two species of gray treefrog live in the La Moine basin.

Employment Distribution



¹ Finance, insurance, and real estate

THE HUMAN PRESENCE

Although people have never congregated in great numbers in the La Moine basin, it has been home to humans for more than 10,000 years. As of 2001, more than 3,000 archaeological sites have been recorded in the area. (A “site” is any spot with even a single artifact indicating ancient human presence). Most conspicuous of these were the mounds encountered by the first Europeans. The ultimate purpose of these structures was a mystery to the newcomers, but it was plain nonetheless that they had been built (to quote one local history) by the “labors of an ancient people.” The Euro-Americans named Mound Township, in McDonough County, after the relics found there. Bluff City was locally noted for its prehistoric relics, in particular for what *The Rushville Times* in 1883 described as its “numerous and extensive” mounds. In McDonough County’s Bethel Township, Native Americans left behind an irregular row of as many as 20 hillocks, ranging up to 6 feet high and up to 25 feet wide at their bases.

Some notion of the richness of these objects is conveyed by finds from the Emmons site in Fulton County, just outside the La Moine area. About 900 years ago, an artisan of the Missis-

sippian culture carved a human face from a piece of red cedar (still found along the bluffs of the central Illinois River valley) and adorned it with a sheet of copper. The mask features a common Mississippian symbol known as a “forked eye”—eyes encircled by painted lines and with two painted lines diverging from the eye onto each cheek. The design may represent the pattern of feathers around the eye of a Peregrine Falcon. Another Emmons mask, dubbed the “long-nosed god” maskette, was made from marine shell.

The Euro-American occupation began in earnest in the 1830s. A few towns popped up trading centers, mining camps, crossroads settlements—but the cities that many early citizens of the La Moine basin dreamed would someday rise above the Illinois valley never materialized. The area is not much less rural today than it was in the mid-1800s. Satellite images taken between 1991 and 1995 showed that less than 2 percent of the land in the area was used for urban purposes—a mere 16,000 acres or so, or 25.5 square miles. (In Illinois as a whole the figure was close to 6 percent.) In 2000, the four-county La Moine River area accounted for 3.8 percent of the state’s land area but only 0.5 percent of the state’s population.

The Area at a Glance

△ From 1970 through 1998, the economies of McDonough and Brown counties grew at rates similar to Illinois’s, thanks mainly to expansion of Western Illinois University in the former and the opening of a new state prison in the latter. Still-rural Hancock and Schuyler counties grew much more slowly in that period. Overall, income growth in the four counties that make up most of the La Moine basin was lower than the 2.2% statewide rate.

△ In the 130 years after 1870, the area’s population shrank 27% while that of Illinois swelled nearly fourfold. Schuyler County has lost three out of five residents since 1870, Brown and Hancock more than two of five.

△ Less than one-half (46.3%) of the area’s population lives in communities larger than 2,500 persons, which is far below the statewide average of 85%. Of its few relatively sizeable towns, Macomb is the largest, with about 19,000 residents in 2000.

△ Coal mines in McDonough, Schuyler, and Brown counties alone produced nearly 255 million tons of coal through 1996. In 1982, Freeman United Coal Co.’s Industry Surface Mine southeast of Macomb began taking coal from the same Colchester seam that sustained the industry in years past.



Michael R. Jeffords



Row crops, such as soybeans (upper left) and corn (lower right) cover about 60% of the land area in the La Moine basin.

The main business of the people then and now is farming. More than three-fourths of the land in the La Moine is considered agricultural; that is a slightly lower proportion than in Illinois as a whole, due to the broken terrain in its southern parts. The uplands are mostly covered by that family of soils known as Mollisols, which developed under grassy prairies; such soils are dark with organic matter (more than 4.5 percent organic matter in the plow zone in some cases, which is quite high). The uplands also are easy to work with machines, sloping less than four vertical feet in 100 horizontal feet across large parts of the area. No wonder nearly 80 percent of the local agricultural land is used to grow row crops like corn and soybeans, which means that such crops cover nearly 60 percent of the local land area. That percentage varies within the area according to terrain; where flat uplands dominate the landscape, as in McDonough County, as much as 85 percent of the surface is devoted to row crops. The land along area streams, in contrast, slopes too steeply to hold a tractor, and if it is used by farmers at all it is usually for pasture or hayfields.

Local farming was once much more diverse. Home gardens and orchards, a chicken coop and a few hogs could be found on nearly every farm. In parts of McDonough County, many farmers in the 1880s grew small

fruit, planting 8 to 10 acres in blackberries, raspberries, and strawberries. (That heritage is recalled next door in Hancock County in Carthage's annual Strawberry Festival.) Wine grapes were also grown; Emmett Township in those days counted at least three vintners among its agriculturalists.

By 1999, however, corn and soybean acreage accounted for 92 percent of the row-crop acreage in the La Moine basin. That degree of specialization leaves area farmers vulnerable when prices fall for these commodity crops. The search is on for other crops that might provide a more lucrative return to farmers. In 2004, Western Illinois University was granted \$30,000 to transform five acres adjacent to the WIU Research Farm into Illinois's first commercial-scale production field of common milkweed, whose floss is useful in bedding and whose seeds supply a variety of chemicals.

While farming remains the overwhelming environmental presence in the La Moine basin, as an economic



Thomas Rice

Most of the grasslands in the La Moine River area are pastures, hayfields, or idle fields.

Jug Towns

Coal is not the only thing mined in the La Moine basin. Deposits of clay were mined to make stoneware pottery, which for decades was one of the area's principal industries. Makers of jugs, field tile, bricks, and other clay-based products located in such La Moine basin towns as Macomb, Bushnell, Ripley, and Colchester in the mid-19th century.

In the 1850s the town of Ripley, on the LaMoine River in Brown County, was known as "Jug Town" because of its extensive pottery business. Unfortunately, moving wares to buyers in St. Louis via the LaMoine River could be done only in spring, when the river was at its highest. Production by Ripley potters boomed until the 1880s nonetheless, until they began to lose business to competitors situated near a railroad or a more easily navigable river. Within a half-century no trace remained of the 18 potteries that once had employed more than 200 workers in the town.

Biggest of the several Colchester potteries was Moses King's Brick and Tile Works, which was a significant local industry for a century after 1875. At one point the King works was turning out 140,000 bricks a week. What is left of the works today (which also is known as Brick Village) is listed on the National Register. The surviving buildings (some dating to 1883) include four beehive kilns with arched roofs, each of whose 250,000 bricks were held together by steel bands rather than mortar.



Outdoor Illinois photo

A Ripley resident displays a jug pieced together from shards found around her home.

The Area at a Glance

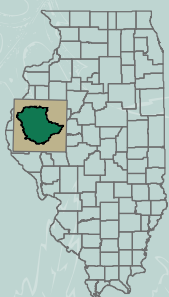
- △ Many area lakes formed in the pock-mocked surface left by the mining of coal in southern Fulton and eastern Schuyler counties, and have become popular sites for fishing and other outdoor fun. The 49-acre Izaak Walton Park Lake is the largest such lake in the area.
- △ The centerpiece of Argyle Lake State Park is a 93-acre lake formed by damming Argyle Hollow, which had long been mined for coal, clay, and limestone.
- △ The area's steep slopes make soil erosion a problem—an economic one for farmers, an ecological one for streams, many of whose quality as habitat is compromised by siltation.
- △ In 1999 topsoil was being lost at high rates from only 3% of area farmland.
- △ Precipitation in the area varies from year to year as well as from season to season, often dramatically. The wettest year on record since 1901 at Rushville saw more than 58 inches of precipitation (in 1990) while during the driest (1913) Rushville got not quite 24 inches.
- △ With only 26 artificially straightened stream miles in the basin, the La Moine River has one of the least channelized watersheds in Illinois.

Land Cover



L.R. Smith • Illinois State Geological Survey

0 3.5 7 14 21 Miles



Source: Critical Trends Assessment Landcover Database of Illinois 1991—1995, IDNR 1995

- | | |
|---------------------|-------------------------|
| cropland | urban and built-up land |
| rural grassland | wetland |
| forest and woodland | barren and exposed land |



assessment area boundary



county boundary



river or stream



wide river or lake

presence it continues to shrink. Since the early 1970s, the farm sector's share of employment in the La Moine basin has shrunk from 19 percent to 9 percent. (The local service sector in recent years has employed twice as many people as does farming.) As for earnings, by the late 1990s the farm sector was providing only 7 percent of the area's income.

Farming requires many fewer hands than it used to, which is one reason why the La Moine basin has seen a steady exodus of people since the 19th century. In the 130 years after 1870, the area's population shrank 27 percent while the population of Illinois as a whole swelled nearly fourfold. Schuyler County has lost three out of five residents since 1870, Brown and Hancock more than two of five.

The La Moine basin is becoming more urban even as it loses people. The countryside hosts fewer farms, and these farms require fewer people to run them; jobs today are in towns. As country people move into towns, more of the people who live in its towns have been moving into their quasi-rural periphery. The result is suburban-style sprawl even in the countryside. According to one survey, between 1982 and 1997 urban land use grew 27 percent in the four counties in which most of the La Moine basin lies (mostly in McDonough and Hancock counties), which is the same rate of urbanization as the rest of the state.

FAR FROM A WASTELAND

More than a century of plowing, ditching, paving, and cutting left more than 99 percent of local ecosystems altered. Most of the La Moine consists of what ecologists call cultured habitats, which result when humans alter natural systems to better serve their needs. Most of the grasslands that cover roughly 18 percent of the area's surface consist of pastures, hay fields, and idle



Michael R. Jeffords

*Raccoons are abundant
in the region.*

fields. More than four of every five acres of wetlands have been drained or filled in.

Much of the open-water habitat in the area is no longer natural, but consists of excavated ponds, impoundments, sewage-treatment lagoons, and reservoirs. For example, the La Moine area has approximately 77 lakes with a total surface area of 4,164 acres. Most of the larger lakes in the area are natural backwater lakes that are part of the Illinois River system, such as Anderson Lake. Most of the rest are artificial. Lakes such as those at Carthage, Augusta, and Mt. Sterling were originally built as public water reservoirs but now are used primarily for recreation. Many area lakes formed in the pock-mocked surface left by the mining of coal. Most of these strip-mine lakes are located in southern Fulton and eastern Schuyler

The Area at a Glance

Δ Droughts have been a regular occurrence, bad ones plaguing the 1930s, the mid-1950s—dry conditions then lasted six years, the most severe drought in terms of persistence—and the mid-1960s. Since the 1960s, the average amounts of precipitation (and thus streamflows) have been the highest in a century. There has been but one major drought since the mid-1960s, in the 1980s, when the lowest-ever flows over a seven-day period on the La Moine were recorded at Ripley and Colmar.

Δ Only about 4,300 acres are in public ownership in the entire La Moine basin—Anderson Lake State Conservation Area, Argyle Lake State Park, and Weinberg-King State Park. Many of the best and largest remaining examples of forest and grassland habitat lie on private property.

Δ The inventory of public land in the La Moine basin is quite small, but the nearby presence of large tracts of relatively good-quality forest and bottomland along the Illinois River in the Chautauqua National Wildlife Refuge and the Sanganois State Conservation Area helps supply the area with forest birds that no longer breed here.

Δ Nineteen natural areas totaling 574 acres, or about .05% of the total local land area, were considered fine enough to qualify as Illinois Natural Areas when the state was surveyed for that purpose in the 1970s.

counties, and have become popular sites for fishing and other outdoor fun. The 49-acre Izaak Walton Park Lake is the largest such lake in the area; most are much smaller.

Changed as it has been, the La Moine basin is far from a wasteland. For all the ills it has endured since the advent of industrial agriculture, the La Moine River itself remains the ecological heart of the basin. In a 1996 survey, the 15.5 miles of the La Moine River from Cedar Creek up to Flour Creek in Schuyler County was given an “A” for ecological quality. Scientists rated it a “Unique Aquatic Resource” that was worthy of being protected for the many and diverse species that depend on it. The river and its companion woods and wetlands also provide a sheltered corridor through which many species of animals can move to new habitats when their accustomed ones have been damaged or destroyed.

Nature preserves have been set aside to protect and preserve examples of all significant natural features found in Illinois. The La Moine basin’s single

dedicated nature preserve is Argyle Hollow Barrens Nature Preserve within Argyle Lake State Park. These 17 acres harbor an unusual plant community consisting of prairie plants, stunted, open-grown trees, and scattered shrubs growing on thin soil over bedrock. Another 19 sites (most of them along the Illinois River) have been identified as significant natural areas.

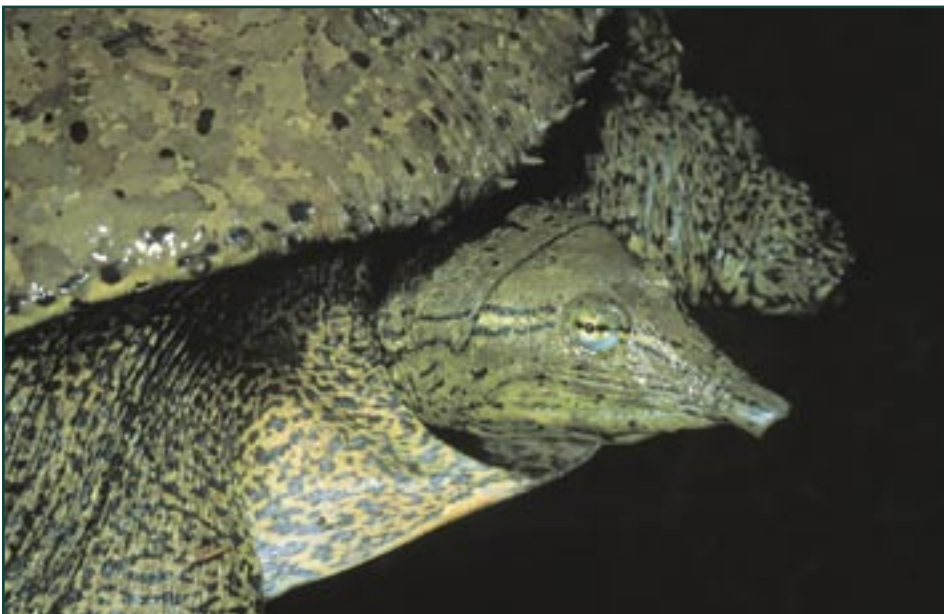
Even a countryside radically altered by agriculture still sustains many species that do not have highly specific habitat needs or that have adapted to living in areas altered by humans, in some cases so successfully that they have become pests. The natural home of the prairie king snake is grasslands of the sort that have become scarce in the La Moine basin. Highway rights-of-way are useful substitutes—the snake uses them to move between wintering, breeding, and feeding grounds—although roadside mowing machines and passing vehicles kill many animals each year.

Cropland is one of the most plentiful habitats locally, and a few native

grassland species such as the Horned Lark appear to thrive in cropland. While virtually all the prairie is gone from the La Moine basin, many bird species adapted to prairies are also able to live in grasslands that are not heavily grazed, such as pastures. Farmsteads with tall shade trees often are home to nesting Warbling Vireos, House Wrens, Chipping Sparrows, and Baltimore Orioles. Eastern Phoebe often nest in farm buildings, as do Barn Swallows. Some species of amphibians and reptiles also have adapted to life near humans. The plains garter snake, common garter snake, brown snake, and northern water snake are typical of cultural habitats in the La Moine area. The American toad, western chorus frog, and bullfrog can be found almost anywhere—crop fields and pastures, in subdivisions and tree plantations—if the ditches, flooded fields, stock tanks, and remnant marshes they need to breed are nearby. Smallmouth salamanders have been found in pastures, yards, and gardens, and can breed in small temporary ponds like roadside ditches. The bullfrog can breed in nearly any permanent pond above a certain size, and does so in such far-from-natural settings as the Bardolph municipal sewage lagoon and a WIU campus golf course pond.

Natural areas and nature preserves harbor the most pristine natural communities, but public lands such as parks, state forests, and wildlife refuges are also islands of biodiversity. The inventory of public land in the La Moine basin is quite small, but the nearby presence of large tracts of relatively good-quality forest and bottomland along the Illinois River at the Chautauqua National Wildlife Refuge and the Sanganois State Conservation Area helps, particularly as birds bred in these neighboring refuges probably help populate the La Moine basin.

Large tracts of land are always desirable as habitat, but not always essential. WIU herpetologist Gordon R. Thurow has found that forested drain-



Michael R. Jeffords

The spiny softshell turtle is one of five turtle species that make the La Moine River basin their home.

age basin areas as small as 12 acres or so are sufficient to support a colony of small animals like the two-lined salamander. Linking such smaller tracts enhances the value of each as wildlife habitat. Vegetated abandoned railroad rights-of-way serve as dispersal corridors across the area's heavily farmed uplands; mammals use such protected avenues to move across a busy agricultural landscape between breeding, feeding, and wintering grounds. Some species of amphibians and reptiles can move from wetland to wetland by using grassy filter strips as safe corridors across farm fields. The timber rattlesnake, for example, forages in deep woods in summer and makes its winter dens on sunny rock outcrops; it must negotiate open woods and fields when migrating between those habitats in fall and spring.

In the same way, vegetated stream bottoms link habitat remnants through the Illinois River floodplain, thus enhancing the area for forest-dwelling species such as the bobcat and gray fox. The Hancock County Soil and Water Conservation District recently placed 50 acres of bottomland forest and associated uplands in permanent easement. The amount of land is small, but the property links several hundred acres of land that were already under permanent easement through government Conservation Reserve Enhancement and Conservation Reserve programs.

Restoring habitats that have not been fatally damaged is thought to be essential to long-term survival of many species in the area. Re-establishing



Michael R. Jeffords

Vegetated stream bottoms link fragmented forest habitats, thus providing much needed corridors for mammals such as the gray fox.

more natural flood pulses, especially along the Illinois River backwaters, would help some floodplain birds. Reconstructed prairies that are grazed, mowed, or burned only once every three years will support not only plants but insects like butterflies that depend on them—grassland birds such as Bobolinks, Sedge Wrens, and Henslow's Sparrows, and the badger and red fox as well as several species of small mammals. Stabilizing erosion-weakened streambanks and reducing contaminated runoff into lake streams and wetlands enhance the latter's ability to support river otters and minks

Lands that cannot be restored can often be managed in ways that enhance

The Area at a Glance

△ The Illinois River valley is rich hunting ground. During the 2003 firearm season, Schuyler County's harvest was 1,710 deer. The take per acre was even higher in Brown County, where hunters bagged nearly as many animals—1,623—in spite of Brown being only 70% as large as its neighboring county.

△ The La Moine basin's single dedicated nature preserve is the 17-acre Argyle Hollow Barrens Nature Preserve within Argyle Lake State Park in McDonough County north of Colchester; it harbors an unusual plant community growing on thin soil over bedrock.

△ Local amateur and professional ornithologists have contributed substantially to the ornithological record of the area since at least the mid-1950s—a good thing, since this area of the state has been studied very little compared to most other regions of the state.

△ Virtually all forest songbirds characteristic of this latitude have at least a remnant breeding population in the La Moine basin's remaining forested areas. However, most struggle with the problems common to such animals in Illinois, including predation on eggs or young in nests (especially by snakes and raccoons) and brood parasitism by brown-headed cowbirds.

their usefulness as habitat. Mowing roadsides only every third year would benefit grassland birds that nest there. Maintaining small thickets of shrubs in stream bottoms and on the unused perimeters of upland properties provides havens for birds such as Bell's Vireo, Willow Flycatcher, Yellow Warbler, and Yellow-breasted Chat.

As noted, few forest sites in the area are large enough to provide the secure breeding grounds needed for some local bird species to begin to reproduce themselves. However, even smallish fragmented wooded public sites can be managed so they provide improved "stopover habitat" in which migrating birds can rest and feed. Increasing the population of oak trees (especially white oaks) in such tracts, for example, makes them more attractive to songbirds such as warblers. Dead trees left standing provide nesting sites for birds

and (in the case of trees with exfoliating bark) roosts for bats.

Improving habitat for one species generally improves it for others. Leaving at least part of the shore around ponds, lakes, and impoundments unmowed not only provides cover for most amphibians but nesting sites for shorebirds. Restoring wooded stream corridors not only expands winter habitat for many birds species but improves in-stream habitats—a boon to struggling populations of endangered or threatened fish, mussels, and crustacean species.

There are models for a more accommodating relationship with nature. In 1997, 24 river otters from distant populations were released into the La Moine River near the Schuyler County town of Brooklyn. Otters were reported seen in the La Moine River in McDonough and Schuyler counties over

the next few years, which suggests that the animals have established themselves in their new home.

The Thistle Hills Land and Water Reserve is a tract of glacial drift hill prairie and upland forest along a tributary of the LaMoine River northwest of Macomb. Owned by Dr. Robert and Alice Henry, Thistle Hills' prairies contain a large population of the state-threatened plant, Hill's thistle. Native shortgrass prairie will be established on 13 acres of existing cropland within the larger reserve, expanding the breeding habitat for the state-endangered Henslow's Sparrow. While nature cannot be returned to its former dominance in the thoroughly humanized, modern agricultural La Moine basin, it can at least be welcomed back as a fellow citizen. 🌿



Michael R. Jeffords

River otters appear to have established themselves in the La Moine River since they were reintroduced into the river in 1997.

(continued from inside front cover)

In addition to coordinating IDNR programs with those of Ecosystem Partnerships, the Ecosystems Program:

- provides technical assistance to the partnerships, such as resource management plans for use by participating landowners;
- assesses resources in the area encompassed by each Ecosystem Partnership, collecting data that the local partners themselves may use to set project priorities and design projects, and supplying scientific support to ecosystem partners, including on-going monitoring of Ecosystem Partnership areas;
- funds site-specific ecosystem projects recommended by each partnership. Such projects may involve habitat protection and improvement, technical assistance, and research and education, including projects that seek to expand the relationships among natural resources, economic development, and recreation.

To provide focus for the program, IDNR developed and published the *Inventory of Ecologically Resource-Rich Areas in Illinois*, and is conducting regional assessments for areas in which a public-private partnership is formed.

The La Moine River Basin: An Inventory of the Region's Resources is based on one of these assessments, the *The La Moine River Basin Assessment*. The assessment was compiled by staff of IDNR's Division of Energy and Environmental Assessment, Office of Realty and Environmental Planning; and the Illinois State Museum, the Illinois Waste Management and Research Center, and the Illinois Natural History, State Geological, and State Water Surveys of IDNR's Office of Research and Scientific Analysis.

The La Moine River Basin Assessment and all other CTAP and Ecosystems Program documents are available from the IDNR Clearinghouse at (217)782-7498 or TTY (217)782-9175. Some are also available on the World Wide Web at:

<http://dnr.state.il.us/orep/ctap> and

<http://dnr.state.il.us/orep/c2000>

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PUBLICATION DESIGN: CAROLYN NIXON

COVER PHOTO: THOMAS RICE

